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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/888,857 | 06/25/2001 | Huck Khim Koay | 70990051-3 | 1972 |

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AGILENT TECHNOLOGIES, INC.
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| EXAMINER |
|---|
| PIERRE, KENELT |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2822 | |

DATE MAILED: 03/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/888,857 | Applicant(s) KOAY ET AL. | |
|---|---|---|---|
| | Examiner KEN PIERRE | Art Unit 2822 | |

*-- The MAILING DATE of this communication appears on the cover sh et with th correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1 to 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

1. This office action is in response to the "DRAWING TRANSMITTAL LETTER" filling date: Jun 25, 2001. Drawing submission is acknowledged and approved.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims1, 2, 3, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshinory et al (6,069,440).

Yoshinory et al discloses a light emitting diode comprises of light emitting component capable of emitting light of high luminance with light emitting characteristic which is stable over a long time of use, thus providing a LED capable which experiences only extremely low degrees of deterioration in emission light intensity, light emission efficiency and color shift over a long time of use with high luminance.

Re claim 1 (parts a, b, c, d and e), Yoshinory et al disclose a chip type light emitting diode, wherein Light emitting diode (LED chip) 202 is installed in a recess of a

casing 204 with tapering wall which is filled with a coating material which contains a specified phosphor to form a coating. (Fig. 1 and 2) (Col.8, line 55 to 67) The conductive wires 103, 203 should have good electric conductivity, good thermal conductivity and good mechanical connection with the electrodes of the light emitting components 102, 202. The conductive wire may be a metal such as gold, copper, platinum and aluminum or an alloy thereof. The light-emitting components 202 are connected to metal terminals 205 installed on the casing 204 by means of conductive wires 203. (Fig. 1 and 2) (Col. 9, line 15 to 36) (Col.8, line 55 to 67) (Col.8, line 55 to 67) The coating material may be a transparent material having good weatherability such as epoxy resin, urea resin and silicone or glass. (Fig. 1 and 2) (Col.16, line 43 to 57)

It is evident that Yoshinory et al anticipate claim 1 by disclosing that his LED is mounted on the recess casing, the conductive wire may be a metal and connected to the electrode of the LED, transparent material serves as coating.

Re claim 2, Yoshinory et al disclose a chip type light emitting diode, wherein light emitting diode (LED chip) 202 is installed in a recess of a casing 204 with tapering wall where light is extracted from the substrate side and is configured for mounting the electrodes to oppose the cup 105a) is used, Ag paste, carbon paste, metallic bump or the like can be used for bonding and electrically connecting the light emitting component and the mount lead at the same time. Further, in order to improve the efficiency of light utilization of the light emitting diode, surface of the cup of the mount lead whereon the light-emitting component is mounted may be mirror-polished to give

reflecting function to the surface. (Fig. 1 and 2) (Col.15, line 55 to 67) (Col.16, line 1 to to 15).

Re claim 3, Yoshinory et al disclose a chip type light emitting diode, wherein light emitting diode (LED chip) 202 is installed in a recess of a casing 204 with tapering wall where metallic layer form the terminal interconnects 103, 203. The conductive wire may be a metal such as gold, copper, platinum and aluminum or an alloy thereof. (Fig. 1 and 2) (Col.15, line 15 to 36)

Re claim 5, Yoshinory et al disclose a chip type light emitting diode, wherein light emitting diode (LED chip) 202 is installed in a recess of a casing 204 with tapering wall where metallic layer form the terminal interconnects 103, 203. The light emitting components 202 are connected to metal terminals 205 installed on the casing 204 by means of conductive wires 203. Good connectivity with the bonding wires which are conductive wires and good electrical conductivity are required. Specifically, the electric resistance is preferably within 300 mu.Ω-cm and more preferably within 3 .mu. .Ω-cm. (Fig. 1 and 2) (Col.15, line 55 to 67) (Col.16, line 1 to 15)
Materials which satisfy these requirements contain iron, copper, iron-containing copper, tin-containing copper, copper-, gold- or silver-plated aluminum, iron and copper. (Fig. 1 and 2) (Col.16, line 35 to 42)

***Claim R jections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinory et al* (6,069,440) in view of Peter (6,045,240).

Re claim 4, Yoshinory et al discloses a light emitting diode comprises of light emitting component capable of emitting light of high luminance with light emitting characteristic which is stable over a long time of use, thus providing a LED capable which experiences only extremely low degrees of deterioration in emission light intensity, light emission efficiency and color shift over a long time of use with high luminance. (Fig. 1 and 2) (Col.8, line 55 to 67)

However, Yoshinory et al are silent on how to assemble multiple of such light emitting diodes on an electrically driven L.E.D. lamp assembly comprising an electrically insulating circuit board substrate having opposed first and second surfaces with vias or holes separation.

Re claim 4, Peter describes how to make an electrically driven L.E.D. lamp assembly (14) comprising an electrically insulating circuit board or substrate (26) having opposed first and second surfaces. (Abstract) A plurality of holes extend through the

board (26) and a plurality of pads (50) of thermally conductive plating are disposed on the second side with each pad (50) associated with the leads to conduct heat from each of the leads to one of the pads (50) while maintaining electrical isolation between the pads. In some instances the holes may be the holes through which the LED leads 30 and 32 extend with each of the lead holes providing thermal conductivity to one of the pads 50. In addition to the lead holes for the leads 30 and 32, there may be included a plurality of holes 52 dispersed among the lead holes. ( FIG. 5) (Col.5, line 31 to 55).

Therefore, Peter is the evidence that it would have been obvious for one of ordinary skill in the art at the time of the invention was made to have recognized to use holes or vias isolation to separate the multiple LED in a same substrate.

***Conclusion***

6. **THIS ACTION IS MADE NON-FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Ken Pierre whose telephone number is (703) 305-4002. The examiner can normally be reach on Monday-Friday from 8:30AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Carl Whitehead, Jr. can be reach at (703) 308-4940. The fax telephone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or processing should be directed to the receptionist whose telephone number is (703) 308-0956.

KP

February 25, 2002

CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800